



# Plattsburgh, New York

Randal J. Stone  
Assistant Chief

Plattsburgh Fire Department  
65 Cornelia Street  
Plattsburgh, NY 12901  
Tel: 518-561-5965  
Fax: 518-561-8236  
stoner@cityofplattsburgh-ny.gov

## MEMO

**TO:** Mayor Donald Kasprzak  
Members of the Common Council

**FROM:** Assistant Fire Chief, Randal Stone

**DATE:** June 6, 2013

**RE:** Fire and Ambulance Responses

For this two week period: Thursday, May 23, 2013 to Wednesday, June 5, 2013  
our Department has responded to the following:

<b>Fire Calls</b>	47
	1 cooking fire
	11 system activations
	27 EMS assist
	1 unauthorized burning
	1 outside rubbish fire
	1 water problem
	1 MVA
	2 smoke odor removal
	1 removal of victim from stalled elevator
	1 dispatched and cancelled enroute
<b>Ambulance Calls</b>	91
<b>Mutual Aid by CVPH</b>	20

# BUILDING INSPECTOR'S COMPLAINT REPORT: 06/04/13

DATE	STREET #	STREET NAME	COMPLAINT	INSP	INSPECTION REPORT	CORRECTED	CORRECTION DATE
05/22/13	5111	NORTH CATHERINE ST	SOFA IN FRONT OF HOUSE	KP	ORDERED PICK UP BY DPW	CORRECTED	5/23/13
05/22/13		NY RD AND US AVE	SIGNAGE FOR ANNUAL COLEMAN TRUCKLOAD SALE	KB		CORRECTIVE ACTION IN PROCESS	
05/22/13	86	OAK ST	TALL GRASS	KP	VERBAL NOTICE OF VIOLATION	CORRECTED	
05/22/13		SMITH ST AND WATER ALLEY	CURB AND SIDEWALK DAMAGE	KB		CORRECTIVE ACTION IN PROCESS	
05/23/13	15	COUCH ST	TALL GRASS	CB		CORRECTIVE ACTION IN PROCESS	
05/23/13	256	MARGARET ST	REQUEST FOR BUILDING INSPECTOR FOLLOW UP	KP		CORRECTIVE ACTION IN PROCESS	
2/26/13	84	COURT ST., APT. A	MOLD	CB	NO MOLD, 1 SMOKE DETECTOR MISSING	CORRECTED	2/26/13
4/29/13	35	MONTCALM AVE	METER BOX PULLED	KP		CORRECTIVE ACTION IN PROCESS	
5/21/13	17	DURKEE ST	YARD REQUIREMENTS	CB		CORRECTIVE ACTION IN PROCESS	
5/23/13	34	WATERHOUSE ST	WATER LEAK	KB		CORRECTIVE ACTION IN PROCESS	
5/24/13		DRAPER AVE	NO ELECTRIC	JM		CORRECTIVE ACTION IN PROCESS	
5/24/13	8	WALWORTH ST (AKA 6 WALWORTH ST)	WATER IN BASEMENT	KP		CORRECTIVE ACTION IN PROCESS	
5/28/13	67	BRINKERHOFF ST	GARBAGE	kp		CORRECTIVE ACTION IN PROCESS	
5/28/13		HOLLAND AREA AREA	BUSINESS IN RESIDENTIAL AREA	KP		CORRECTIVE ACTION IN PROCESS	

DATE	STREET #	STREET NAME	COMPLAINT	INSP	INSPECTION REPORT	CORRECTED	CORRECTION DATE
5/28/13	19	LEONARD AVE	PARKING ON LAWN (CITY ROW)	CB		CORRECTIVE ACTION IN PROCESS	
5/28/13	56	SALLY AVE	GARBAGE	KP	VERBAL NOTICE OF VIOLATION	CORRECTIVE ACTION IN PROCESS	
5/29/13	80	SALLY AVE	COUCH ON CITY PROPERTY	KP		CORRECTIVE ACTION IN PROCESS	
5/30/13	77	SALLY AVE	WATER SHUT OFF	JM	TENANT MOVED OUT	NO CORRECTION REQUIRED	
5/30/13	25	STANDISH ST	WATER SHUT OFF	CB		CORRECTIVE ACTION IN PROCESS	
5/31/13	18	DURAND ST	PORCH NOT FINISHED	KP		CORRECTIVE ACTION IN PROCESS	
5/31/13	31	DURAND ST	UNLICENSED VEHICLES	KP		CORRECTIVE ACTION IN PROCESS	
5/31/13	5059	US AVE	SPECIAL USE PERMIT COMPLIANCE	KB		CORRECTIVE ACTION IN PROCESS	
5/31/13	71	WALL ST	TRAIN NOISE	JM	SITE INSPECTION WITH BRIAN MULCAHY	NOT APPLICABLE	
6/3/13		POND ST	GARBAGE	CB		CORRECTIVE ACTION IN PROCESS	
6/3/13	38	PROSPECT AVE	TALL GRASS	CB		CORRECTIVE ACTION IN PROCESS	
6/4/13	4	CARLTON DR	GARBAGE	CB		CORRECTIVE ACTION IN PROCESS	



MUNICIPAL LIGHTING DEPARTMENT  
(A Municipally Owned and Operated Power System)  
**Plattsburgh, New York**

William J. Treacy, P.E.  
Manager

6 Miller Street  
Plattsburgh, New York 12901  
518-563-2200  
Fax: 518-563-6690

May 23, 2013

To: Mayor Donald M. Kasprzak

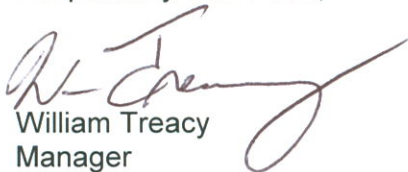
Subject: Electric Meters Revenue Type – Bid No. 2013-5-1  
Bid Review and Award Recommendation

The Management of the Plattsburgh Municipal Lighting Department has reviewed and evaluated the single bid received on May 21, 2013 for the above subject contract.

We recommend award to **GoTToGo Electric, Inc, LeRoy, NY** in the total amount of **\$86,054.00**. GoTToGo Electric, Inc. is the lowest responsive and responsible bidder.

If you have any questions, please contact me. Thank you for your attention to this matter.

Respectfully Submitted,

  
William Treacy  
Manager

CC: City Clerk  
Councilor Jackson, PMLD Liaison  
MLD Financial Director  
Bid 2013-5-1 File



CITY OF PLATTSBURGH

BID TITLE: Plattsburgh Electric Meter - Contract # 77 2013-5-1

BID OPENING DATE: May 21, 2013  
11:00

NAME & ADDRESS OF BIDDERS	AMOUNT OF BID	NCBC	SECURITY
<u>Plattsburgh Electric</u> <u>Jim Henderson 7865 East Main Rd Le Ray, NY 14482</u>	<u>\$28,054-</u>	<u>✓</u>	<u>Chic</u>

Kath  
2/16/13



MUNICIPAL LIGHTING DEPARTMENT  
(A Municipally Owned and Operated Power System)  
**Plattsburgh, New York**

William J. Treacy, P.E.  
Manager

6 Miller Street  
Plattsburgh, New York 12901  
518-563-2200  
Fax: 518-563-6690

June 3, 2013

To: Mayor Donald M. Kasprzak  
From: Bill Treacy, Manager  
Subject: Permission to Issue Bid Proposal

The Plattsburgh Municipal Lighting Department respectfully requests permission from the Common Council to advertise for sealed bid for:

**PMLD BID NO. 2013 - 7- 1**

**SALE OF SURPLUS 2.4/4.16 KV-120/240V  
TRANSFORMERS**

**BID OPENING DATE: July 9, 2013 AT 11: 00 AM**

We propose that this bid be received under PMLD Bid No. 2013-7-1, prior to 11:00 a.m., local time, on the date shown above, then publicly opened and read in the Common Council Chambers.

Respectfully submitted,

Bill Treacy, P.E.  
Manager

cc: Keith Herkalo, City Clerk  
Councilor Jackson, PMLD Liaison  
Bid 2013-7-1 File



MUNICIPAL LIGHTING DEPARTMENT  
(A Municipally Owned and Operated Power System)  
**Plattsburgh, New York**

William J. Treacy, P.E.  
Manager

6 Miller Street  
Plattsburgh, New York 12901  
518-563-2200  
Fax: 518-563-6690

May 31, 2013

To: Mayor Kasprzak

From: Bill Treacy, Manager

Subject: Permission to Issue Bid Proposal

The Plattsburgh Municipal Lighting Department respectfully requests permission from the Common Council to advertise for sealed bid for:

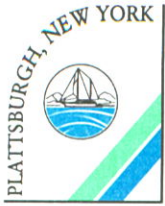
**PMLD BID NO. 2013 - 6 - 2  
CLEANING, INSPECTING, TESTING AND CALIBRATING  
OF SUBSTATION RELAYS**

**BID OPENING DATE: July 2, 2013 AT 11: 00 AM**

We propose that these bid be received under PMLD Bid No. 2013 - 6 - 2, prior to 11:00 a.m., local time, on the date shown above, then publicly opened and read in the Common Council Chambers.

CC:

Keith Herkalo, City Clerk  
Councilor Jackson, MLD Liaison  
Kelly Clookey, Finance Director  
Project File



# Plattsburgh, New York

Kevin R. Farrington, P.E.  
City Engineer

Engineering & Planning Dept.  
41 City Hall Place  
Plattsburgh, New York 12901  
518-563-7730  
Fax: 518-563-3645

June 4, 2013

Mayor Donald Kasprzak  
And  
Members of the Common Council  
41 City Hall Place  
Plattsburgh, N.Y. 12901

**REF: Request for Permission for  
Mayor to Sign Change Order  
No. 1 To Contract #2013-04  
"Boynton Avenue Improvements  
North Catherine Street – Lozier Place"**

Dear Mayor Kasprzak & Common Council:

It is requested that the Mayor be authorized to sign Change Order No. 1 to Contract #2013-04, "Boynton Avenue Improvements, North Catherine Street – Lozier Place." This Change Order, in the amount of **\$12,540.75**, is for replacing additional sidewalk, catch basin and handicapped access ramps that deteriorated over the course of winter or were discovered upon excavation. Also to install conduit and a vault for NYSDOT pedestrian signal communication wire.

Sufficient funding is available in Capital project **H5110.40 "2013 Street Resurfacing"** to cover the cost associated with this change order.

Very truly yours,

Kevin Farrington, P.E.  
City Engineer

/dn

Att.(3)

CC: City Clerk  
City Chamberlain  
Public Works Dept.



C H A N G E O R D E R

**PROJECT TITLE:** Boynton Avenue Improvements, North Catherine St - Lozier Pl.

**CONTRACT NUMBER** 2013-04      **CHANGE ORDER NUMBER:** 1      **DATE:** 6/4/2013

**TO (contractor):** Steven Fuller Excavation  
P.O. Box 386  
Keeseville, NY 12944

You are hereby directed to make the following changes to this Contract:

ITEM NO.	DESCRIPTION	CHANGE IN PRICE
1.	35x4 sidewalk replacement:	\$ 2,107.22
2.	8 LF curb replacement:	\$ 637.29
3.	Catch basins:	\$ 3,453.51
4.	Northeast/southeast corner handicap ramps (Oak St.):	\$ 5,866.46
5.	NYS DOT conduit vault:	\$ 476.27
TOTAL:		\$ 12,540.75

The original Contract Sum was.....\$.... 261,000.00

Net change by previous change orders:.....\$.. 0.00

The Contract Sum prior to this Change Order was.....\$.....261,000.00

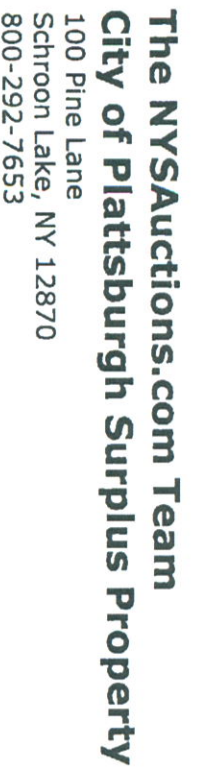
The Contract Sum will be  
(increased) (decreased) (unchanged) by.....\$... 12,540.75

The new Contract Sum including this Ch.Order .....\$.... 273,540.75

The Contract Time will be  
(increased) (decreased) (unchanged) by.....\$..... - 0 -

The Date of Completion as of the date of this CO is: July 12, 2013

RECOMMENDED BY:	ACCEPTED BY:	APPROVED BY:
<u>Engineering &amp; Plan.Dept</u>	<u>Steven Fuller Excava.</u>	<u>City of Plattsburgh</u>
<u>41 City Hall Place</u>	<u>PO Box 386</u>	<u>41 City Hall Place</u>
<u>Plattsburgh, NY 12901</u>	<u>Keeseville, NY 12944</u>	<u>Plattsburgh, NY 12901</u>
_____	_____	_____
(signature)	(signature)	(signature)
<u>Kevin Farrington, C.E.</u>	_____	<u>Donald Kasprzak, Mayor</u>
_____	_____	_____
(date)	(date)	(date)



**The NYSAuctions.com Team  
City of Plattsburgh Surplus Property**

100 Pine Lane  
Schroon Lake, NY 12870  
800-292-7653

# Final Financial Report

**Auction #49**  
**Sale Name:** City of Plattsburgh Surplus  
**Property:** Real Estate Auction  
**Date of Sale:** 6/5/2013

Page 1

Clerking Sheets: Auction 49

6/5/2013 11:23:30 AM



# Plattsburgh, New York

Jonathan P. Ruff, P.E.  
Environmental Manager

41 City Hall Place  
Plattsburgh, NY 12901  
Phone: 518-536-7519  
Fax: 518-563-6083  
[ruffj@cityofplattsburgh-ny.gov](mailto:ruffj@cityofplattsburgh-ny.gov)

May 22, 2013

To: Mayor Kasprzak and Members  
Of the Common Council

Fr: Jonathan Ruff

Re: Training for Brian Guimond

Brian Guimond now has enough work experience to qualify for a Grade IA water treatment plant operator certification. He has two classes that he still needs to take to meet all of the requirements. Attached is a spreadsheet that shows the estimated costs for one of the classes. It is respectfully requested that he be authorized to attend this class in June at an estimated cost of \$1,740.

Please contact me if you have any questions.

c: Bill Todd

*June 17 - June 21, 2013*

*where?  
Morrisville NY*

<u>Date</u>	<u>Room</u>	<u>Breakfast</u>	<u>Lunch</u>	<u>Dinner</u>	<u>Fee</u>	<u>Travel/Misc</u>	<u>Total</u>
6/17/2013	70	8	9	25		400	512
6/18/2013	70	8	9	25	600	0	712
6/19/2013	70	8	9	25			112
6/20/2013	70	8	9	25	0	0	112
6/21/2013		<u>8</u>	<u>9</u>	<u>25</u>		<u>250</u>	<u>292</u>
	280	40	45	125	600	650	1740

Guimond IA.xls  
5/23/2013 13:40





MUNICIPAL LIGHTING DEPARTMENT  
(A Municipally Owned and Operated Power System)  
**Plattsburgh, New York**

William J. Treacy, P.E.  
Manager

6 Miller Street  
Plattsburgh, New York 12901  
518-563-2200  
Fax: 518-563-6690

Date: May 23, 2013

To: Mayor Donald M. Kasprzak

From: Bill Treacy, Manager

Subj: Substation Maintenance II

As Manager of the Municipal Lighting Department, I hereby request permission for Mr. Richard Strack to attend Substation Maintenance I Training from October 6 - October 11, 2013 to be held at Valley Forge, PA at an estimated cost of \$ 2,989.50.

If you have any questions, please contact me.

Atch: 2

cc: Councilor Jackson, MLD Liaison  
Kelly Clookey, Finance Director  
Travel File

TRAVEL REQUEST AND AUTHORIZATION - CITY OF PLATTSBURGH

TO: DEPARTMENT LIAISON COUNCILOR

Permission is hereby requested for Richard Strack

Of MLD to travel to Valley Forge, PA

For Substation Maintenance II

On October 6 -11, 2013  
Hours, Incl. Travel Days

Please attach program or other literature, and back-up for estimated costs.

Estimated Costs:	Mileage/Gas	<u>\$ 200.00</u>
	Ferry/Road Tolls	<u>\$ 40.00</u>
	Hotel	<u>\$ 750.00</u>
	Meals	<u>\$ 229.50</u>
	Registration	<u>\$ 1770.00</u>
	Air Fare	<u>\$ 0.00</u>
	Personnel Cost (Replacement, overtime & dedicated time of attending personnel)	<u></u>
	TOTAL	<u>\$2,989.50</u>

Please indicate department budget code from which this trip will be expended: 731.1; 741.1; 781.1

Date: May 21, 2013 Dept. Head: Bill Treacy, Manager

\*\*\*\*\*  
AUTHORIZATION:

Pursuant to the authority granted me under the City of Plattsburgh Common Council Resolution dated \_\_\_\_\_, I do hereby authorize the above travel as requested.

Date: \_\_\_\_\_  
\_\_\_\_\_  
Councilor, Dept. Liaison  
\_\_\_\_\_  
Mayor

NOTE: This authorization and supporting receipts must be attached to the travel voucher claiming reimbursement for Expenses (C.C. Resolution, Feb.9,1989).

# AVO Training Institute

Course:

## Substation Maintenance II

4.5 days  
3.6 CEUs  
Hands-on  
8:00am - 4:30pm, the final day ends at 12:00pm

Course Number: 231

Tuition USD: \$ 1770

Available in English or Spanish.

Substation maintenance is a key part of any plantf s maintenance program. Failures in key components such as racking mechanisms, meters, relays and buses are the most common cause of unplanned outages. Power transformer failures may result in significant downtime and long delays in equipment replacement. Most of these failures can be detected and prevented. Having skilled substation maintenance technicians is essential to equipment reliability.

## Learning Objectives

- Identify safe work procedures
- Explain the configuration and function of common equipment found in a substation
- Identify components of power and distribution type transformers, including common insulating and cooling mediums
- Explain common transformer configurations
- Perform and interpret results of winding resistance, dielectric absorption ratio, polarization index, and power/dissipation factor tests on transformers
- Calculate temperature corrections
- Identify ASTM requirements for testing and sampling gas and oil in transformers
- Inspect, adjust and perform insulation resistance, connection resistance and overpotential tests on air and disconnect switches
- Perform and interpret results of earth resistivity tests

## Who Should Attend

This hands-on course is intended for apprentices, technicians and engineers responsible for the maintenance and testing of industrial and utility substations.

## Requirements

This course requires working knowledge of basic electricity. Students must wear long pants and safety toe shoes to complete the lab portion of this course. No shorts or sandals will be allowed.

## Schedule

Start Date (mm/dd/yyyy)	End Date (mm/dd/yyyy)	Location
6/10/2013	6/14/2013	Dallas, TX
6/24/2013	6/28/2013	Dallas, TX
7/15/2013	7/19/2013	Dallas, TX
8/12/2013	8/16/2013	Dallas, TX

9/16/2013	9/20/2013	Dallas, TX
10/14/2013	10/18/2013	Dallas, TX
11/11/2013	11/15/2013	Dallas, TX
12/16/2013	12/20/2013	Dallas, TX
7/15/2013	7/19/2013	Pasadena, CA
9/23/2013	9/27/2013	Pasadena, CA
12/9/2013	12/13/2013	Pasadena, CA
6/24/2013	6/28/2013	Portland, OR
8/26/2013	8/30/2013	Portland, OR
10/28/2013	11/1/2013	Portland, OR
6/10/2013	6/14/2013	Valley Forge, PA
8/12/2013	8/16/2013	Valley Forge, PA
10/7/2013	10/11/2013	Valley Forge, PA
12/9/2013	12/13/2013	Valley Forge, PA

If you have any questions, visit our website at [www.avotraining.com](http://www.avotraining.com) or contact us at 1.877.594.3156 or [info@avotraining.com](mailto:info@avotraining.com)





MUNICIPAL LIGHTING DEPARTMENT  
(A Municipally Owned and Operated Power System)  
**Plattsburgh, New York**

William J. Treacy, P.E.  
Manager

6 Miller Street  
Plattsburgh, New York 12901  
518-563-2200  
Fax: 518-563-6690

Date: June 3, 2013

To: Mayor Donald M. Kasprzak

From: Bill Treacy, Manager 

Subj.: Substation Training

As Manager of the Municipal Lighting Department, I hereby requests permission to attend the class on Substation training at the University of Wisconsin on October 22-30, 2013 to be held in Madison, Wisconsin at no travel cost to the City.

The training is required for my renewal of my New York State Engineering license due in January 2014. If you have any questions, please contact me.

cc: Councilor Jackson

## Fundamentals of Substation Equipment and Control Systems

~~March 25-27, 2013 in Lake Buena Vista, Florida~~ ■ **October 23-25, 2013 in Madison, Wisconsin**

### Course Outline

#### Day 1

7:30 Registration

~~March 25-27 in Lake Buena Vista:  
Holiday Inn - In the Walt Disney World Resort  
1808 Hotel Plaza Blvd.  
Lake Buena Vista, FL~~

**October 23-25 in Madison:  
The Pyle Center  
702 Langdon Street  
Madison, WI**

8:00 Welcome and Introductions

*John A. Raksany, PE*

Program Director

Department of Engineering Professional  
Development

University of Wisconsin-Madison

*John Appleyard, PE*

System Protection Engineer

American Transmission Company  
Madison, Wisconsin

8:10 Instruction Begins

#### 1 Substation Types and Purposes

- Fundamentals of power system operation
- Primary substation equipment

#### 2 Power Transformers and Controls

- Major components
- Construction and operation
- Connections and ratings
- Fixed taps and LTCs

#### 3 Introduction to Schematics and Wiring Diagrams

- Control logic
- Converting control schematics to wiring diagrams
- Example transformer control and wiring diagrams

#### 4 Voltage Regulators

- Construction and operation
- Ratings

#### 5 Disconnect Switches

- Types and applications
- Manual and motor-operated switches; control schematics

#### 6 Power Circuit Breakers

- Purpose and types
- Construction and operation
- Schematics and wiring diagram examples

5:00 Adjournment

#### Day 2

8:00 Instruction Continues

#### 7 Circuit Switchers

- Purpose and major components
- Construction and operation
- Schematics and wiring

#### 8 Reclosers

- Purpose and applications
- Major components
- Types and ratings
- Construction and operation

#### 9 Power Fuses

- Types and applications
- Operation

#### 10 Instrument Transformers

- Voltage and current transformers
- Principles of operation
- Burden, saturation, and accuracy
- Ratings and connections

#### 11 Protective Relay Systems

- Purpose and types
- DC trip and close schematics
- AC voltage and current schematics
- Wiring diagrams

5:00 Adjournment

#### Day 3

8:00 Instruction Continues

#### 12 Battery Systems

- Purpose and ratings
- Chargers and charging control systems

#### 13 AC Station Power Systems

- Station power requirements
- Back-up supplies/sources
- Source transfer control schemes

#### 14 SCADA

- Purpose and functions
- SCADA overview
- RTUs and IEDs

#### 15 Integrated/Automated Substation Control

- Integration/automation defined
- Communication systems and interfaces

#### 16 Capacitor Banks

- Purpose
- Construction and operation
- Switching and protection control schemes

#### 17 Metalclad Switchgear

- Advantages and applications
- Construction and operation
- Protection and control

#### 18 Wave Traps

- Purpose and applications
- Major components
- Tuning and operation

#### 19 Substation Commissioning

- Acceptance testing equipment
- Start up procedures
- Energizing equipment
- Substation and transmission line examples

4:00 Final Adjournment

### Past Participants Say

"I REALLY LIKE THE PHOTOGRAPHS THAT ARE TAKEN OF REAL SUBSTATIONS AND EQUIPMENT. I ALSO LIKE THE EXERCISES THAT INVOLVE THE SCHEMATIC DIAGRAMS AND SUBSTATION COMMISSIONING. THIS COURSE PROVIDES A GOOD OVERALL PICTURE OF SUBSTATION EQUIPMENT AND OPERATION."

*Thanh-Xuan Nguyen, Power Engineer,  
Schweitzer Engineering Labs, Pullman, Washington*

"GREAT COURSE! EXCELLENT OVERVIEW OF SUBSTATION EQUIPMENT. AS A NEW PROFESSIONAL TO THE ELECTRIC UTILITY INDUSTRY, THIS CLASS WAS VERY INFORMATIVE AND USEFUL!"

*Tim Culp, Electrical Engineer I,  
Kamo Electric Cooperative, Vinita, Oklahoma*

"VERY GOOD CLASS! FIRST OF THIS TYPE (SUBSTATION EQUIPMENT) I'VE SEEN OFFERED. VERY USEFUL FOR THOSE OF US WHO HAVEN'T SPENT TIME IN THE FIELD. I WILL RECOMMEND THIS COURSE TO OTHERS!"

*Ariana Amberg, Field Application Engineer,  
Schweitzer Engineering Labs, Boerne, Texas*

"GREAT INTRODUCTORY COURSE ON SUBSTATION EQUIPMENT AND OPERATIONS. THE COURSE IS AN EXCELLENT TRAINING SESSION FOR PEOPLE ENTERING THIS FIELD."

*Jerry G. Boggs II, Senior Engineer,  
Progress Energy, Raleigh, North Carolina*

"GREAT SPEAKERS ARE THOSE WHO ARE VERY KNOWLEDGEABLE AND CAN CONVEY THAT KNOWLEDGE VERY EASILY. THE COURSE INSTRUCTORS EXCEL AT THAT."

*James Hutt, Electrical Engineer,  
Lockheed Martin, Manassas, Virginia*

**ENROLL ONLINE TODAY! Or visit our Web site**



# Principles of Substation Design and Construction

February 11-13, 2012 in Lake Buena Vista, Florida ■ October 28-30, 2013 in Madison, Wisconsin

## Course Outline

### Day 1

#### 7:30 Registration

~~February 11-13 in Lake Buena Vista, Florida~~  
Holiday Inn - In The Walt Disney World Resort  
1805 Hotel Plaza Blvd.

#### ~~October 28-30 in Madison, Wisconsin~~

The Pyle Center  
702 Langdon Street

#### 8:00 Welcome

John A. Raksany, PE

Program Director, Department of Engineering  
Professional Development  
University of Wisconsin-Madison

#### 8:15 Instruction Begins

##### 1 Substation Types and Purposes

Sheldon Silberman, PE

Manager, Xcel Energy Inc.

- Fundamentals of power system operation
- Objectives of substation design

##### 2 Overview of the Substation Design and Construction Process

Kevin Borgmeyer, PE

Manager, Alliant Energy

- Establishing the need for substation facilities
- The project scope document
  - what it is and what it should contain
- Site selection and environmental issues
- Working with the project manager
- Engineering design
  - equipment specifications and drawings
- Specifying and procuring material and equipment
- Construction
- Testing, start-up, and commissioning
- Documenting field revisions

##### 3 Initial Steps in the Design Process: Setting the Bounds for the Overall Project

Sheldon Silberman, PE

- Reviewing and understanding the project scope document
- Information to gather before the first site visit
- What to look for on the initial site visit

- Determining site adequacy for initial and future requirements

- Environmental, zoning, and public perception issues

- Construction and construction outage requirements

- access for construction and O&M equipment
- Ordering material/delivery date issues

#### 4 Site Selection and Design

Kevin Borgmeyer, PE

Sheldon Silberman, PE

- General requirements
- Environmental and permitting issues
- Site preparation
- Drainage and erosion protection
- Surface materials
- Roads and access

#### 5 Permitting and Environmental Issues

Sheldon Silberman, PE

Kevin Borgmeyer, PE

- Acquiring necessary permits
- Zoning and ordinance restrictions
- Long-term site impacts
- Impacts during construction
  - runoff/stream pollution

#### 6 Foundation Design

Chuck Hanson, PE

Founder and Owner, Hanson Engineering, LLC

- The site visit and what to look for
- Understanding soil test reports
- Slab on grade design example

#### 7 Bus Designs for Reliability

Kevin Borgmeyer, PE

- Bus configurations and 1-line diagrams
- Forced and planned outage performance
- Cost-reliability comparisons

#### 5:00 Adjournment

### Day 2

#### 8:00 Instruction Continues

##### 8 Substation Layout: Converting 1-line Diagrams to Physical Layouts

Sheldon Silberman, PE

- Substation components and required code clearances
- BIL, insulation coordination, and surge arresters

## Past Participants Say

**"THIS IS THE FOURTH COURSE I'VE TAKEN FROM UW AND I WOULD RECOMMEND THEIR COURSES TO ANYONE. ALWAYS VERY HELPFUL, ESPECIALLY THE PRACTICAL EXAMPLES AND REAL-WORLD ISSUES PRESENTED. SHELDON SILBERMAN IS VERY KNOWLEDGEABLE AND PERSONABLE! KEVIN BORGMEYER IS A GREAT TEACHER; I HOPE SOME DAY I'LL KNOW AS MUCH AS HE DOES (OR EVEN HALF THAT MUCH)!"**

Annette Jessen, Stations Structural Designer, Idaho Power Company, Boise, Idaho

**"GREAT COURSE. VERY WELL DONE AS USUAL (THIS IS MY THIRD UW COURSE)."**

Ward Arms, Electric Department Manager, Hallberg Engineering, White Bear Lake, Minnesota

**"I THINK ALL OF THE SPEAKERS HAVE GREAT KNOWLEDGE OF THEIR SUBJECTS AND PRESENT IT VERY PROFESSIONALLY. THANK YOU!"**

Mohammed E. Mohtati, Substation and Transmission Engineer, Vectren Energy Delivery, Evansville, Indiana

**"THE REFERENCE MATERIALS YOU PROVIDED WERE EXCELLENT. IT WAS EXTREMELY VALUABLE HAVING THE INSTRUCTORS SHARE REAL-WORLD EXPERIENCES. ALL THE SPEAKERS WERE EXCELLENT. WELL-PREPARED, GOAL-FOCUSED, WELL-VERSED, AS WELL AS BEING VERY PERSONABLE."**

Steve Lacaire, Senior Service Engineer, Eaton Electrical Corp., West Boylston, Massachusetts

**"THIS COURSE EXCEEDED MY EXPECTATIONS. I ANTICIPATE USING A MAJORITY OF THE MATERIAL IN THE NEAR FUTURE."**

Michael Wilson, Substation Design Engineer, Power System Engineering, Inc., Madison, Wisconsin

#### 9 Grounding and Ground Grid Design

Sheldon Silberman, PE

- Purpose of grounding
- Field-testing ground grid resistance and soil resistivity
- Materials and installation

#### 10 Substation Structures

Sheldon Silberman, PE

- Choice of structure for substation designs
- Specifying a structure

#### 11 Major Substation Equipment

Kevin Borgmeyer, PE

- Circuit breakers
- High-voltage and low-voltage switches
- Metal-clad and metal-enclosed switchgear

#### 12 Secondary Substation Equipment

Kevin Borgmeyer, PE

- Surge arresters

#### 5:00 Adjournment

### Day 3

#### 8:00 Instruction Continues

##### 13 Auxiliary Equipment and Systems

Sheldon Silberman, PE

- AC/DC station power and control system supplies
- Insulated cables and raceways for power and control

#### 14 Protective Relaying and Control

Kevin Borgmeyer, PE

- System protection objectives and philosophies
- Protective relaying schemes for major substation equipment
- Typical relay types and applications

#### 15 Expansion and Upgrade of Existing Substations

Sheldon Silberman, PE

- Kevin Borgmeyer, PE
- Feasibility and limitations

#### 16 Commissioning and Start-up

Sheldon Silberman, PE

#### 4:00 Final Adjournment

ENROLL ONLINE TODAY! Or visit our Web site